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ORIGINAL ARTICLES.

THE OUTBREAK IN KANSAS.

REPORT OF G. C. FAVILLE, D.V.M.

(From the Northwestern Live Stock Journal.)

To His Excellency James B. Grant, Governor of Colorado:

SIR—Having been appointed by you as a member of the committee to investigate the disease that exists among the cattle at Neosho Falls, Woodson County, Kansas, and in other places in that State, I would report the following as the result of such investigation:

In company with J. W. Snyder, of Cheyenne, Wyo., and Mr. F. P. Ernest, of Deer Trail, Colo., we visited the herd of Mr. Daniel Keith, of Neosho Falls, on March 20th, and found his cattle with the following symptoms and history: Mr. Keith had at first a herd of 116 cattle. Of these three were cows, seventy were yearlings and calves, and the rest were two-year-olds. Of these seventy head of yearlings, sixty-three head had been bought December 10th and delivered the next day. These were gathered in a radius of ten miles in a district south of Neosho Falls. Of the rest eight head were bought of Alexander Linn, one mile south of the Falls, and about December 5th he bought five head of Nelson Stride, two miles south of his place, and about December 17th one from William Inge, two and a half miles southeast from the Falls.

The history of the disease as it appeared in this herd is as follows, as nearly as could be ascertained: About December 23d or 24th he noticed a number of calves (yearlings) standing humped up, head drooping, and jerking up the hind feet as if sore or benumbed. They would walk around if driven, but would soon lie down if left alone. In two or three days after they were inclined to lie down all the time. He found around the top of the hoof and in the digital space a red swollen condition, very tender and the claws spread. Then the swelling extended higher up, as far as the fetlock joint. The walls of the foot began to separate and come off. He did not examine any of their mouths, and so far as he knew they were eating right along. They were taken sick two or three days from the time the first one was taken sick until, about January 1st, he had from twenty to thirty sick ones. For convenience of description we will adopt the plan of the physicians who preceded us and divide the cattle into two lots.

Lot No. 1.—The first animal died about January 5th. It was the best one in the herd. The symptoms were as follows: The animal stopped eating grain, but ate hay, seemed very stiff, frothed at the mouth, and appeared in great agony. On March 8th another one died. This one had been suffering for about ten weeks, and had lost both hind feet. Three had been killed. These calves had been fed on shelled corn, hay and oat straw before he got them. After he had got them he fed them on shelled corn and mowed oats and hay. Six calves were taken sick within three days after he got them.

Lot No. 2.—November 1st he bought forty head of two-year-steers and placed them in a timber pasture adjoining the other cattle. They were fed upon hay with grain. The first sign of disease among this lot appeared February 28th. About ten were sick, with the same symptoms as the rest. On March 13th he separated them.

He found there were then 118 head upon the place. Some had died and he had bought others, and some of the cows had calves. Of these 118 head seventy-four were more or less affected. Two of them will lose all four feet, nine have one foot off, four

have two feet off, one four-year-old cow loses both hind feet and one front claw, three were with one foot affected, six were affected in two feet, and one in three feet, all of which will lose one or more of their toes. There were more or less mouth symptoms in all of these cases, but they were more of the character of simple abrasions than of ulcerations, and did not show in these cases as plainly as in the herd of Mr. Hindman.

Dr. Trumbower says that on March 9th, he discovered a red yearling steer. It had a hot mouth, with the membranes very much reddened and flushed. He discovered three blisters, one of which was the size of a dime, in the roof of the mouth, and two smaller ones on the tongue. Temperature 104.4° Fahrenheit. He was lying down when found; no swelling of the feet, but much stiffened. Next day he was lying in the same place, with the blisters ruptured. He has since nearly recovered.

Mr. Beard's hired man says that he came to work on the place February 16th. The next morning he noticed an old cow to be lame. On February 18th a cow from Keith's farm was brought on the place. This last named cow was taken sick on or about February 22d. March 1st the third one was taken sick. This is a large two-year-old roan steer. On March 1st or 2d the fourth animal was noticed to be sick—slobbering—and Mr. Beard states that he examined her mouth and found her tongue red and covered with little pimples. She died at 10 A. M. of the next day. The fifth case on Beard's place was slightly lame on March 11th, but was recovering.

The highest temperature among the sick ones was 102.8° Fahrenheit. These cattle were fed on corn, corn fodder and wild hay, and drank from the Neosho river.

Mr. Hindman lives five miles north of Neosho Falls, and has resided for eight years upon the place. He says he has not bought any cattle for eighteen months, and they are all natives. March 10th he had ninety-six head of cows, calves, yearlings and two-year-olds. These cattle had only been upon the road once, and that during New Year's week, when they were driven to a stalk field, distant one-quarter of a mile. Mr. Hindman's farm is just across the road from Mr. Keith's, and Keith's cattle had

been upon the road previous to this time. On or about January 10th a milch cow which had never been upon the road was taken sick—found lame as the others had been, and is so now. She was kept in a lot where all the other cattle came to water. The first animal taken sick after this was on February 14th or 15th, the morning following a heavy sleet; then about seventeen head were taken lame, and since then there have been new cases daily. On March 14th there were sixty-five affected. March 19th the cases here were as follows:

Eighteen head with two hind feet off.

Five head with one hind foot off.

One animal with three feet off—both hind feet and one front foot.

One with all the feet off.

The rest of the sixty-five head were lame in the hind foot or feet.

Dr. Trumbower visited some reported cases at Hall's Summit, Coffey County. He found two cows belonging to George R. Smith, one with the outer half of the left front foot coming off at the joint within the hoof. Left hind leg coming off between the hoof and fetlock, and the right hind leg broken off at the same place, and carrying the bones of the metatarsal region with it. Mouth symptoms slightly marked. About January 1st this cow became tangled in a rope and was cast, but did not get lame until February 1st. She calved February 29th, mouth some sore and her appetite not of the best. March 17th the cow was as described; calf well, but small. Hall's Summit is twenty miles from Neosho Falls.

Christian Pribbernow, living on Owl Creek, ten miles southwest of Neosho Falls, has 183 head of cattle, of which sixteen are affected. There are fifty-four yearlings, twenty-four two-year-olds, fifteen three-year-olds, and the balance were cows and calves. The disease broke out February 15th, mostly among the older cattle. The smaller ones had been put in a separate pen and fed on millet, oats and corn fodder. The others were fed largely on wild hay. Six of this herd have very bad feet. Two of them lose the whole of the digital bones.

On the farm of Mr. Henry McCrary, living twenty-five miles north of Russell, in Osborn County, Kansas, we found twenty-five cattle that were showing the disease, with identical symptoms. The first case appeared February 11th, but there is great doubt regarding the symptoms of this case. The rest there can be no doubt upon.

These are the herds (with the exception of the one at Hill's Summit) that we visited. The disease had been reported to be contagious aptha, or foot and mouth disease. The symptoms of foot and mouth disease may be briefly tabulated as follows:

First—Rise in temperature to 103° to 107°.

Second—Loss of appetite; hair standing wrong.

Third—Hot, clammy mouth; saliva hanging in ropy strings from the mouth, and eyes running.

Fourth—Blisters upon the tongue, and on the lips and between the toes.

Fifth—Blisters rupture, leaving bad, ulcerated sores, which readily head in the majority of cases. Some authors say that in badly neglected cases the hoofs may separate from the foot and drop off. Ulcers may break out upon the bag and in rectum or vagina, and the disease is reported by all authorities to be not only highly contagious among cattle, but hogs, dogs, chickens and even men will take the disease. And the disease is stated by all authorities to have a period of incubation of from one to eight days at the longest.

Now the condition of things we find is not the same as that given for contagious aptha. Here we have diseased cattle running with other cattle for weeks and months, and not communicating the disease. We have some mouth sores, but none that are of any more importance or any more severe than those we found in healthy steers among healthy cattle. Calves upon the Hindman place have been turned, as fast as taken sick, in with the herd of twenty finely fed calves, and none of them have become infected. Pigs in all the places have had free access to the cattle pens, and in some cases that were killed drank the blood and ate portions of the carcasses. Dogs completely devoured the carcasses of the cows that died in Osborn County, and none of

them have been in the least sick. So there can be no evidence of the disease being contagious, except the fact of a large number of cases breaking out on different farms as well as upon the same farm so nearly at the same time. There is not the slightest evidence to show that this disease was carried from one of these farms to the other. There is no evidence, that I have been able to find, to show that the disease was carried into Osborn County, for no cattle have been taken into that county since June 6th, last. There is no evidence to show that the disease was carried from Keith's farm to Beard's, for the Keith cow was not the first cow sick. This, with all other things taken into consideration, causes me to say most positively it is not the foot and mouth disease, nor any other contagious disease. We find in all the farms, without exception, the whole of the hay is cut from wild meadow, growing on bottom land; that this hay is largely made up of wild rye and allied grasses, and that this rye is badly infested with ergot. In short, so much so, that in many heads of grass every seed shows the ergot spur. The well-known effect of ergot upon animals as well as man, when being continued, and in not overdoses, is to produce dry gangrene of the extremities, or the parts farthest from the centre of circulation. I have seen this same disease in Storey County, Iowa, in connection with Dr. M. Stalker, Professor of Veterinary Science in the Iowa Agricultural College in 1879, and at that time we pronounced it ergotism, and subsequent facts confirmed our diagnosis. Since that time, Prof. Stalker has had similar cases each year.

The same trouble broke out not long since, in Hon. J. P. Maxwell's herd at Boulder. At Neosho Falls we met with Dr. D. E. Salmon, of the Department of Agriculture, at Washington; also Dr. M. Stalker of Iowa, and Dr. M. R. Trumbower, of Sterling, Illinois, and this diagnosis of the case is fully confirmed by these gentlemen. When sustained by such eminent counsel, it is not possible that I should have erred in my diagnosis.

In conclusion then, I would say, there is no danger of the disease spreading. It is quite as liable to attack cattle that are fed upon "wild rye" in Colorado as Kansas, because this grass is grown under conditions favorable to the growth of ergot.

FOUL IN THE FOOT.

(Extract from the Report of State Veterinarian, J. J. HOPKINS, D.V.S.)

Foot and mouth disease is a highly contagious and infectious febrile disease, associated with a vesicular eruption in the mouth, between the pedal digits and around the coronets. In some cases the mouth only is affected: in others the feet may be the seat of the eruption, the membranes of the mouth remaining free.

Cattle, sheep, goats and pigs are affected by the contagion in the order named, and instances are on record in which horses, dogs and poultry have been infected.

On February 2d, 1884, the steamship Ontario, from England, arrived at Portland, Maine, and landed twenty-eight Hereford cattle suffering with foot and mouth disease. By negligence on the part of those in charge the disease spread to the surrounding country before its character was recognized.

At latest accounts the authorities had the matter in hand, and all known infected places and sick cattle were quarantined. Still new centers of contagion were being developed, and grave fears are entertained as to the result.

FOOT AND MOUTH DISEASE

was reported among the cattle near Neosho Falls, Kansas, last month, producing the greatest excitement among people interested in agriculture and stock-growing. That State was utterly unprepared for such an emergency, as they had no sanitary laws in force, and no funds provided with which to indemnify owners or investigate and control the spread of contagion.

The urgent necessity of prompt action induced Governor Glick to call a special session of the Legislature to enact such laws as were necessary to stamp out this or any future invasion of contagious disease. Many veterinarians and gentlemen experienced in handling cattle visited the infected farms, and soon the theory of contagious foot and mouth disease was disproved.

A LOOK INTO KANSAS.

I was provided, through the kindness of Hon. Thomas Sturgis,

with a letter of introduction to Governor Glick, of Kansas, and I was afforded every facility for a thorough examination of the cause and symptoms of the disease among the cattle. I visited many farms near Neosho Falls, and found that the cattle are fed on wild prairie hay, corn-fodder and straw; in some places hard, flinty corn, on the ear, was added to their rations, care being taken to have pigs run in the same lot to utilize the corn in the droppings of these animals.

A SUGGESTION AS TO CAUSES OF DISEASE.

It is a grave mistake to feed young cattle with a food that they are unable to masticate or digest. The corn is softened by maceration and absorption of the different gastric juices in the intestinal tract and passes from their bodies in good condition for easy digestion by the pig—fattening pigs at the expense of the calf! So the corn, instead of nourishing the calf, actually robs the already impoverished creature, which has to consume great quantities of coarse fodder to get a small amount of nutrition.

Is it any wonder that such a creature should be unable to withstand the hardships of a severe winter without shelter except on some favored (?) farms which possess a timber lot; and old residents say that the past winter was the most severe during the last ten years. Where a great number of animals are fed in the same manner, and exposed to the same hardships, they are of necessity liable to the same disease, and when any extraordinary hardship is imposed on them, the weakest succumb. Again, in some cases we find that some animals have a predisposition to disease from their birth, a weak constitution, that if nursed and pampered in youth, might reach adult age with medium strength.

You can now appreciate why so many of the young stock on the Kansas farms developed disease due to innutritious food and exposure to an exceedingly hard winter. The disease in Kansas is "foul in the foot," commonly called foot rot, and it is a common disease in all countries where like conditions exist.

A number of scientific gentlemen investigating the cause of this disease, discovered in the hay some wild spurred rye, and concluded that the malady was due to ergot poison.

SERIOUS SUGGESTIONS.

If this disease is due to ergot poison, why then is this the first outbreak, since the Kansas farmers have fed this same kind of hay to their cattle from the first settlement of the State? Again, on Mr. Goodrich's farm, where the disease prevails, the lands are improved by cultivation, and there is *no ergotized rye* in this hay. Yet, out of ninety-six cattle, forty head of young stock are reported affected with the disease. Then, stranger to say, Mr. Beard has fed seventy-five head of cattle all winter on hay that is full of ergot, of which I present you a sample taken from his feed-rack, and only three heifers and one old cow are affected. Stranger still for the ergot theory, Mr. Pribbenow fed one hundred and ninety-five cattle on millet hay and corn-fodder, and he has fourteen of his young stock affected.

Another puzzle is presented by Mr. Keith buying sixty-three head of young stock from Mr. Davis, on the 15th of December, and on the 23d nearly all were down with disease. Keith's hay contains ergotized rye. Davis has had no sickness in his herd. I took the opportunity to visit nearly all the farms adjoining those having sick cattle, and found that more or less ergotized rye can be found in the hay, and yet they had no sick or lame cattle.

The experiments of Dr. Samuel Wright, recorded in Finlay Dun's Veterinary Medicines, show the effect of ergot on the lower animals.

When given in large doses, the effect is to produce nausea, impaired appetite, weak, irregular pulse, diarrhœa, excessive fetor of secretions and excretions, paralysis of the hinder extremities, enlargement of the liver, contraction of the spleen, impairment of the senses, wasting and general debility.

It does not, however, as in man, cause gangrene in the extremities.

None of these symptoms were found among the sick cattle of Keitz.—*From the Democratic Leader, Cheyenne, Wyom. T.*

CASTRATION OF THE STALLION AND CRYPTORCHIDE, WITH AND WITHOUT RESTRAINT.

By G. Bailey, D.V.S.

(*Continued from page* 13.)

Castration by *ligature* is now but very little practiced, although the operation is so well adapted for man that no other is ever employed in any malignant disease affecting the testicle, or hypertrophy, when from its size it becomes a burden and annoyance.

The most crude and commonplace employment of ligature is to encompass the entire cord, and its envelopes, with a "waxed string," and then detach the testicle with the knife. The sequel often proves, however, that the ligature has not been drawn tight enough to slough off that portion below the string, which leaves a nucleus for a fungous enlargement at the lower extremity of the cord, known as champignon, and sometimes extending as high up or even beyond the abdominal ring, when it takes the name of scirrhous of the cord. In every instance where I have yet been called upon to operate for champignon, and could trace the method employed in the castration of the animal, it has proved to be by ligature.

A much more scientific use of the ligature, if it is to be employed at all, would be to divide the vas deferens, and then expose the artery, which will be found pursuing its tortuous course along the posterior portion of the cord, the artery alone to be securely tied with silk, or, better still, with catgut ligature; and while ligature of the artery would seem to be the most surgical and humane, experience has proved that it is one of the most unsuccessful of all methods. The late Professor Dick recommended the ligature for a number of years; but towards the end of his life he was forced to acknowledge, and frankly did so, that it was attended with frequent fatal results, the very presence of the ligature seemingly inducing a prejudicial effect, irritating the cord and causing peritonitis or abscesses. *Torsion* is held in high esteem by many eminent practitioners as the most reliable and humane, the cord quickly giving way under the slow and steady

turning of the forceps, the spermatic artery alone remaining unbroken till it is drawn out as small as a piece of thread. The operation does not appear to be a painful one, nor to be succeeded, when rupture ensues, by any alarming hemorrhage. *Scraping* the cord is practiced to a limited extent in the East, but in the West it is a very common mode of castration upon the plains, where droves of young horses are caught and submitted to this process, and immediately allowed their liberty, being given no after care or confinement. The operation is simple and apparently safe. After the testicle is exposed, the vascular cord is scraped with a rough-edged knife until it is divided, or a thimble with a flat edge is sometimes employed for the same purpose. Another mode is to spread out the cord, thus elevating the artery, and divide all below with the scalpel, leaving nothing but the artery, which is then safely divided by the same process.

At the first meeting and organization of the United States Veterinary Medical Association, Dr. R. Jennings exhibited the *ecraseur*, for castrating horses, a French invention introduced by him for that purpose into the United States in 1852, but not then favorably received by stock owners. He explained its advantages and working, but it was not at that time appreciated by members of the convention. Since that time the instrument has come into much more general use, and is the only instrument, with the exception of the "House clamp," employed in castration without restraint, by such bold and skilful operators as Miles, Miller, and the late C. D. House, of New York, the latter one of the most ingenious and practical men who ever made a specialty of equine dentistry and castration.

The ecraseur is now largely used by the regular profession, and with almost uniformly good results where its principles are correctly understood and properly applied. These I believe to consist of slowly and steadily turning the instrument, by which the internal membrane of the artery is broken and forms a cul-de-sac, containing the clot, to which it afterwards adheres through the effusion of plastic lymph. If this precaution is taken, I believe it to be a safe and humane mode of operating, although I have often seen profuse hemorrhage ensue from the rapid and

careless use of the instrument in the hands of unskilful men.

I now come to consider the merits of the "House clamp," so called from the name of its inventor, an instrument which I have successfully employed with uniformly good results in my practice, never having yet seen a single unfavorable termination from its use. I have come to believe the employment of this instrument to be much safer than the ecraseur, in that the firm and uniform crushing of the cord, *below the clot*, serves as a guard and insurance against hemorrhage which renders such a result almost if not quite impossible, while the slight amount of pain and irritation endured by the patient after the division of the non-vascular portion of the cord, is always an assurance that no undue amount of inflammation has been induced, calculated to retard the healing process which has been excited by the operation; and while I have never known of a case of hemorrhage, primary or secondary, resulting from its use, I have been called several times to attend cases of excessive hemorrhage where the ecraseur had been unskilfully employed. I need only to refer to the complications arising from castration, immediate and remote, such as hernia, hemorrhage, champignon or scirrhous cord, peritonitis, enteritis, gangrene, tetanus, amaurosis, and rarely, glanders and farcy, as these are well understood by the profession, only to say that their avoidance can best be promoted and insured by the most humane and painless mode of operating, and these I believe to be embodied in the use of the "House clamp."

I come now to what I consider a very important auxiliary to castration proper, being no less than the removal of the non-apparent testicle from the *cryptorchide*, or ridgling horse. Until a safe and expeditious method of operating upon cryptorchides had been discovered, the veterinary profession were "groping in the dark" in their endeavors to relieve solipeds of an incumbrance that not many years ago was thought to be impracticable, if not impossible. The advantages of such an operation, if its entire safety could be practically demonstrated, were self-evident to any one who ever had any experience with a ridgling horse; for I think I hazard nothing in saying they are the most unsafe and ungovernable brutes of the equine genus. Now that the

noted specialist, Farmer Miles, has discovered a safe and humane method of operating upon ridglings, and has publicly demonstrated its entire success, not only throughout this country, but also England, Ireland and Scotland, I believe the veterinary profession cannot do less than to acknowledge their indebtedness to an ingenious and skilful man for a valuable contribution to veterinary surgery; a contribution that prompted Mr. George Fleming, in the London *Veterinarian*, to make the graceful and frank avowal, "that it had remained for an 'American farmer' to visit England and publicly demonstrate to British veterinary surgeons, what they had never dreamed of being successfully accomplished, the safe and scientific removal of the non-apparent testicle of cryptorchides."

If I were asked to give a definition of the cryptorchide or ridgling horse, I should say it was an animal with one or both testicles *retained and concealed within the abdominal cavity* ("Ectopiæ of the testicles" is the designation given them by Chauveau), and within the limits of such a definition I do not include the testicles that may be retained in the *constricted portions* of the *tunica vaginalis*, or that remain in any position *external* to the abdominal wall. To constitute a ridgling, the internal abdominal ring must be closed, "hermetically sealed," or, as Miles tersely expressed it, "the door is locked and the key is lost." Having under his instruction for some time successfully employed his method of operating upon ridglings, I can fully appreciate the delicate and patient manipulation necessary to accomplish a safe and certain passage through the abdominal wall, that enables us to possess ourselves of the coveted and hidden gland; and while I am not at liberty to describe the *modus operandi* of Miles, I believe I am "telling no tales out of school" by undeceiving the profession in the opinion I find they generally entertain, that the testicles can be safely removed through the inguinal passage. In company with one of our graduates, Dr. S. S. Field, I sometime since met with a Mr. Adams, of New York State, who claimed to be able to successfully operate upon ridgling horses through the inguinal passage, his mode of operating being to manipulate the testicle towards the "internal inguinal ring" with his right hand

and arm by the rectum, while with his left he introduced a spoon forceps (he had invented) through the inguinal passage, grasping the gland and safely removing it. Now, I undertake to say, if he, or any other man, ever removed any testicle that *had not descended into the scrotum*, with spoon forceps, or any other method, from or through the inguinal passage, that testicle was all the time *external* to the abdominal wall, and *never within it*; and if that method could be forced or employed, the great liability to hernia would be the first thing that should suggest itself to any intelligent practitioner. We all know that in the fœtus the testicle floats in the abdominal cavity, being suspended by a peritoneal fold, at the anterior border of which are enclosed the spermatic vessels. To the posterior extremity of the testicle is attached a thick, round funicle, called the pilot, or *gubernaculum testis*, and when all normal conditions are fulfilled, the progress of development in the fœtus pushes the testicle towards the inguinal region, the gubernaculum acting as a guide, and descending into the inguinal opening, draws the testicle after it, and in this way contributes its share in the formation and construction of the 'vaginal pouch' in which the testicle is afterward contained. But in the ridgling, the internal abdominal ring being closed, the pilot is powerless to perform its mission; the inguinal sac, or *tunica vaginalis*, is never formed, and the *testicle still floats* in the *abdominal cavity*, although in an undersized and undeveloped condition as compared with the normal and matured gland. The function of the testicle being to secrete the spermatic or seminal fluid, which contains the spermatozoa, this function is held in abeyance in the undeveloped testicles of cryptorchides, and if both glands were contained within the abdominal cavity, he would be as impotent as the mule, or other hybrid animal, whose spermatic fluid contains no spermatozoa; and in the only instance in which I have ever had an opportunity to dissect a ridgling (who had died from the effects of an injury), I found the vesiculæ-seminales, on both sides, in an atrophied and unoccupied condition, that afforded ample evidence their mission had never been performed. Believing it to be in the power of every one of us to benefit our profession, by the contribution of such facts

and observations as we have found to be both practical and successful, I have endeavored to collect and submit such suggestions at this time as I trust will be kindly received, if not adopted and approved, and to point out that which has been based on science and confirmed by experience, in contrast with crude theory and superstitious empiricism.

CONTAGIOUS DISEASES OF ANIMALS IN THE UNITED STATES.

A Paper read at the Chicago Convention by Prof. J. Law, F.R.C.V.S., of Cornell University.

(*Continued from page* 8.)

The Lung Plague in America the Lung Plague in the Old World.

But we are reminded that there are in our midst stockmen who deny the existence of the genuine European lung plague in America, and who quote anonymous veterinarians in support of their assertion.

I am in no wise disconcerted by this. In company with other sanitarians I had to meet the same assertions a quarter of a century ago, and the tactics now adopted are the same as were followed then.

Then as now, the agitation was ascribed to the cupidity of the agitators. Then, as now, the cattle dealers declared the lung plague a myth, and quoted the late Professor Dick to the effect that it was simply an imflammation of the lungs caused by impure air. The same Professor denied the inoculability of hydrophobia, described rinderpest as a mere impaction of the manifolds and wrote an article to prove the non-contagious character of epidemic diseases in general. We all know that personal interest and the love of notoriety will lead certain men to promulge certain dogmas that outrage the intelligence and common sense of the age. There are still, I believe, at Cambridge, some learned men who assert that the earth is flat and that the sun revolves around it once in twenty-four hours.

A loss of 500,000,000 from lung plague alone has taught England that she is not dealing with a myth, but with a terrible

and exacting reality, and a long and intimate acquaintance with the lung plague has enabled England to pronounce without hesitation on the existence of the same disease in cattle exported from our shores.

To come back to our own case, our self-appointed judges should have gone to the east and given some attention to the facts of the case before rendering their decision and visiting us with wholesale condemnation. They should have stood with us in the yards of the Blissville distillery in 1879, when the veterinarians who had been hired by Messrs. Gaff, Fleishmann & Co., and who had denounced us in the public newspapers, and published a certificate that there was not a case of lung plague in the distillery stables, were invited to select from the cattle we had condemned those that they considered sound, and were furnished in every case on dissection, with the evidence in the lung extensively and most characteristically diseased. They should have stood with us in the field of J. E. White, of Sagg, Suffolk Co., N. Y., where nine cattle, infected by a bull calf from Brooklyn, stood ready to be shot. They should have seen the darkening faces of scores of the inhabitants, and heard the denunciations and the warnings that we would be held responsible for what they considered a grave error and a high-handed outrage on property. They should have seen the urging necessary to get the executioner to do his duty and they should have seen the restoration of universal confidence and support when the chests were opened and the masses of loathsome and characteristic disease exposed. They should have accompanied us in the rest of our inspections and heard the men who had been the foremost to denounce us offering to pay out of their own pockets the value of the animals we condemned in case they should not be found after death precisely as we had pronounced them. They should have attended us in our work in the east end of Long Island, and seen that wherever a farmer had taken in a calf out of the infected herd brought from Brooklyn by Billard, there the malady had broken out and decimated the herd. They should have visited with us the fine Jersey herd of Mr. Watrous, Perth Amboy, N. J., where an infected cow, brought from a sale in New York city, introduced

the disease, which proved simply ruinous. They should have visited the extensive and valuable Jersey herd of Mr. James A. Hoyt of Patterson, Putnam Co., N. Y., where the introduction of the infection in four cows from New Jersey and Maryland led to the disease of the entire herd and to the loss of $20,000 or more. They should have witnessed the losses consequent on the introduction from New York city stock yards of infected animals into the stock farm of Mr. Baldwin, live stock agent of the Erie Railway, into the Westchester herd of Mr. Roach of shipbuilding fame, into the dairy herd of the Bloomingdale Lunatic Asylum, into the herd of the Children's Hospital at Willowbrook, Staten Island, and into a thousand others which it would be too tedious to mention. They should have witnessed the many similar results in New Jersey, Maryland, Delaware and Virginia, and then they would have been in a position to decide justly whether we were dealing with a terribly contagious and fatal disease of the lungs or not.

I mention these cases of recent infection not as desiring to publish that any of the stock specifically named are to-day tainted with this disease, for in every such instance the malady has been stamped out, and the stock can now be certified sound. I adduce them merely as undeniable outbreaks occurring in the herds of men so well-known that no one interested in the subject can have any difficulty in attesting their truth for himself. Let our traducers try to disprove these few instances of the many outbreaks we are prepared to attest. Similar outbreaks are occurring to-day.

The New York Disease Imported.

But some will even deny that the disease prevalent on our eastern seaboard is the genuine lung plague of Europe. Well, it was unknown in America until 1848, when Peter Dunn of Brooklyn bought an English cow from the ship "Washington." This cow died in a few weeks of this lung affection, and the disease quickly spread to his other cows and to those of his neighbors, including the stables of the Skillman Street Distillery, where it continued until 1862 and was recognized by Dr. Thayer and the other members of the Massachusetts Commission.

William Meakim of Bushwick had his herd infected in 1849 by a yoke of oxen employed in drawing grains from the Brooklyn distilleries and lost forty head in three months, and from six to ten head yearly for twenty years thereafter, when he gave up the business. This brings it down to 1869. Since that date I have been frequently consulted about this disease, not in New York only, but in the adjoining states on the south and occasionally in Connecticut.

Why has the Malady not extended West?

From New York the plague has extended two hundred miles in a direction southward, and to-day holds its ground and continues to extend as opportunity offers. It has followed this course simply because the traffic in live stock during the war and since has been active from New York to the large cities on the south and because in and around these large cities, the infection has found that constant interchange of animals and mingling of herds which insures its perpetuation by presenting an endless succession of new and susceptible subjects. The same extension would have taken place over all the large manufacturing cities of New England, but for the careful guardianship of the Cattle Commissioners of Connecticut, who throughout these years have been called upon at frequent intervals to stamp out circumscribed fires of infection lit up by importations from New York.

The plague has not extended westward mainly because there has been so little cattle traffic in that direction. It would have been financial folly at any time to send common cattle west from the great eastern cities, and, thanks to the Alleghenies, there is no large city within two hundred miles of New York in that direction, that would draw upon the market of the latter for dairy cows, or that calculated to keep up the disease by the constant interchanging of animals among herds.

The dangers from thoroughbred cattle sent west were incomparably greater, but several conditions served to reduce the risks of infection by this channel.

First. Thoroughbreds are usually better guarded against danger of contamination, not being sold in the common stock-yards.

Second. Their owners are usually responsible and honorable men who would be little likely to sell at the current high market rate animals that they know to be infected.

Third. Thoroughbreds are always sold with pedigree, and the buyer is fully acquainted with the position and standing of the seller, so that in the case of infected animals the breeder would have been constantly subject to an action for damages.

Fourth. Until recently thoroughbred cattle were comparatively seldom sent west to our unfenced pasturages, so that if some did carry infection into new herds, the latter were still on well fenced farms, and were kept rigidly apart from other stock to secure the purity of the breed; and thus the infection had a good chance to attack all the herd and to die out for lack of fresh susceptible subjects.

Such an immunity of a country in close proximity to an infected one is not at all unprecedented. Europe furnishes an exact parallel. For centuries the lung plague has prevailed in Central Europe, where it is kept up by the active cattle traffic and the constant importations from the infected east. But Spain and Portugal on the south, and Scandinavia on the north, being out of the line of direct traffic, keep clear to the present day—the few invasions of the northern nations having been easily repelled by prompt isolation and slaughter, while the less enterprising southern peninsula has not even once been called upon to suppress an outbreak.

Dangers Increasing.

But our dangers to-day are far greater than they have been in the past. Tens and hundreds of thoroughbred cattle are being constantly shipped to the west, and the great demand is now for the unfenced ranges on the plains and beyond them. There, the disease once introduced, would find all those favorable conditions which have perpetuated it for centuries on the steppes of eastern Europe and Asia, in spite of the best efforts of science, aided by the ungrudging support of the governments. These conditions are identical with those of Australia, where the disease has defied every effort to extirpate it, though these were carried out almost

regardless of expense and of the numbers of animals that might have to be slaughtered. In Tasmania, New Zealand, and South Africa the experience has been the same—the plague, once planted on unfenced ranges, pastured in common by large herds, the property of different owners, has perpetuated itself in spite of every effort of man to suppress it.

Nor is our danger alone from thoroughbred cattle. The great investments in cattle from the plains, and the consequent enhanced prices, have established a trade in common stock for the supply of the western ranches, and young stock are extensively shipped from the Middle and Eastern States to meet the demand. In years past the losses in ventures in young calves have seemed to check the trade, but I regret to say it still continues to a considerable extent, and every such shipment is pregnant with danger.

If there were any hopes of the extinction of the lung plague after it had reached our unfenced pastures, we might find some excuse for those who would have us close our eyes to the danger; but when it threatens us with a tax of $60,000,000 to $200,000,000 a year, a tax which must increase in a ratio with the increase of our herds, and which no statesmanship and no financial ability can ever hope to arrest or abolish, we cannot but consider him as an enemy to his country and to humanity, who would counsel or encourage apathy and inaction. Who would cry peace! peace! while a remorseless enemy is at our doors, and his emissaries and battalions are even in our midst, ready to seize on our stronghold? Who would claim health, while the cancer was eating into the tissues and slowly extending toward the vitals? Who would claim security, when the deadly cobra had been roused, and had coiled himself for his fatal spring?

If I speak strongly, it is because I see the full measure of our danger. It is because I have traced the history of this disease in all historic time, and can speak from the unvarying experience of successive centuries and of different hemispheres; it is because I have been honored with a great trust in this matter, and that I would be recreant to that trust, to the country, to my profession and to myself, if I failed to give a warning where danger threatens, and reassurance where our course is safe.

(*To be continued.*)

EPITHELIOMA CONTAGIOSUM (Bol.)

(SO-CALLED VARIOLA OF BIRDS)

The minute structure of fowl-pox, by Dr. Csokor, Vienna Oest., IV Jahr, Schrift für Wissen., Vet. Extracts by Dr. R. S. Huidekoper, V.M.

From the earliest times we have had descriptions of the fowl-pox, a contagious disease affecting pigeons, chickens, turkeys, and even hawks. Hensinger, who first thoroughly described the disease, attributes the first mention of it to Arabian writers in the year 572. Crescenzio saw the pustules on the heads and around the eyes of pigeons, and noticed that it was especially epidemic in the summer months. Various writers, mostly from Italy, described this disease, and Bonfatti, Klein and others tried to identify it with variola in man.

Leblanc, Roell, and Bruckmueller regarded it as an ophthalmia. Spinola and D'Arboval doubted the identity of it with variola, and obtained only negative results in reciprocal inoculations of the pustules from fowls, man, sheep, the cow, etc. Rivolta, in 1873, advanced the opinion that the "fowl-pox" was due to a parasite, causing a skin disease, which he called "psorospermosi della cresta." In the same year Dr. Bollinger identified the pustules with a skin neoplasm in man, the "molluscum contagiosum." From Bollinger's researches, it is not a "fowl-pox," but an epithelioma contagiosum, which attacks chickens, pigeons and turkeys, in an epidemic form, during the hot months. As the cause of the molluscum, Bollinger gives a low organism of the group of sporophytes. The following lesions are given by the same author: The emaciated body shows pale muscles, and general anæmia over the head, comb and gills, larynx, throat, palate and tongue, and sometimes in the nostril are found isolated, or confluent nodules, the size of a millet seed to that of a pea, grayish red, smooth or nodular, with starlike dirty gray scabs. In one case, over thirty of these nodules were seen. Microscopical examination showed the formation of epithelioma, with the difference, that, in the protoplasm of the cells were peculiar shining round bodies (18 to 20 mm. diameter), which showed neither

colloid or amyloid reaction. Inoculated fowls, or sound ones placed in contact with affected ones, showed the lesions in about five days; eleven days later the nodules reached the size of peas; by the third week the chickens became dejected, refused their food, and died with the appearance of a general cyanosis. Inoculations on sheep and goats gave negative results; on pigeons the tubercles appeared, but the birds recovered.

From the small amount of literature on the subject, it is evident that this disease in fowls is not analogous to variola, but to molluscum contagiosum.

During the last summer Dr. Csokor received two living and three dead chickens, the last of a coop of thirty, which had died of the same trouble; the origin of the contagion was unknown. Dr. Csokor inoculated other fowls, and obtained the clinical symptoms and pathological lesions of the so-called variola of fowls. He inoculated molluscum contagiosum from man in the combs of chickens, and obtained the same disease. From a review of the work, in this disease in man and in other animals, the author adopts the name given by Bollinger, of epithelioma contagiosum, as being the most proper.

The clinical symptoms are dullness, with standing feathers, distinct chills of the whole body, smooth round, or mulberry shaped tumors, from the size of a hemp seed, to that of a bean, on the comb, gills, around the eyes, ears, and beak; sometimes the top of the tumor was thrown up like a thick crust, with the tissue underneath very moist; the conjunctiva excessively reddened, covered with an exudation of false membrane; the nostrils filled with thick crusty masses; breathing short, accelerated and difficult; the birds stand with the beak on the ground; heart beats rapid, and thumping, not to be counted; on the mucous membrane of the mouth and throat is found an analogous eruption, and false membranes. The course of the disease is short, the birds dying from asphyxia, due to the false membrane in the throat; in one case the lungs were hepatised. After the inoculation of three new birds, the symptoms showed themselves in 6 days: by the 10th day the tumors were the size of peas; these

were covered with scabs on the 15th day; by the 26th day, most of the tumors had disappeared, and by the 32d day the birds had entirely recovered. The tumors were succeeded by cicatrices, on which the feathers reappeared. Birds inoculated by Bollinger all died except a pigeon. The mortality varies greatly with the various epidemics. Whilst these epidemics are most common in summer, Dr. Csokor saw one in February, and a Hungarian colleague says it is most frequent among young turkeys during the spring months. Dr. Csokor prefaces his microscopical study of the eruption by a minute description of the normal histology of the comb, gills, and mucous membrane in the chicken. The former consist simply of stellate connective tissue cells, with isolated elastic fibres, which conjoin to give a fasciculated appearance. Numerous papillæ are found, and the whole is covered by a five-cell or ten-cell layer of membrane; the vascular supply is rich; the tissue belongs to the erectile. After the first tumor appears, it is followed by smaller ones, in the immediate circumference. Other primary nodules, however, soon appear. The beginning of the morbid process is from the rete Malphigii, between the papillæ with increase of the epidermic cells, and rapid proliferation of the nuclei. The cells become dry, and the nuclei are not to be distinguished. In the lower layer are found the peculiar bodies (koerperchen, not colored by eosine) as in the molluscum contagiosum. The peculiar bodies are sickle shaped, lying outside of the cells of the ground substance. They are about the size of the red blood cell, of a greenish tinge, sharply formed, and transparent in the middle. The sickle shape turns to a wedge, lemon, and finally to a round one, the bodies still remaining outside of the cells. Larger bodies are then found *in* the cells—large shining balls appear in the majority of cases; these belong to the same general class as the *monocystis, coccidium oviformi*, and the *psorosperma*, as the author shows from an accurate microscopic study. Dr. Csokor comes to the following conclusions.

1st.—There is *not a variola* of fowls. All heretofore discribed disease of this kind corresponds to the molluscum contagiosum.

2d.—This disease is best described by the name of *epithelioma contagiosum.*

3d.—This malady is contagious, and is identical with the disease in man.

4th.—The virus lies in the the molluscum bodies. Inoculation gives positive results.

5th.—Whether they are gregarian must be determined by future experiments.

6th.—If they are, their causative action must be further studied.

7th.—The mortality is influenced by the point at which the eruption occurs.

ACTINOMYKOSIS IN NORTH ANDOVER.

By J. F. Winchester, D.V.S.

In September, 1882, Mr. W. bought a Guernsey bull of Dr. Borland, of New London, Conn., by the name of Sunflower, and soon after having the animal it was noticed that he did not breath naturally, a sound being emitted at each respiration, which gradually grew worse. The next May his appetite failed, on account of not being able to swallow readily, so that in September he was so emaciated that he was destroyed.

The post mortem revealed the abdominal and thoracic viscera normal, with the exception of a small white and firm nodule in the liver. By removing the larynx and pharynx, I found above them a large firm round tumor, about the size of a foot-ball, which, when opened, was found to contain degenerated pus, containing numerous small yellow masses.

Case No. 2 of Actinomykosis.—A native cow had first showed signs of failing appetite about the 1st of May, 1883, and early in June she began to breath hard and lose flesh. Sometime during the month of August the sub-maxillary bone began to enlarge on one side, and continued to grow until the middle of November, when it broke, and discharged a thin pus. The ulcer kept discharging until the latter part of December, when she was killed. On making a post mortem I found the abdominal viscera normal, while the lungs contained a few white hard nodules in the anterior lobes.

On removing the pharynx and larynx I found a post pharyngeal abscess, but not quite as large as that in case No. 1. There was degeneration of the sub-maxillary bone.

CASE No. 3 OF ACTINOMYKOSIS.—Guernsey cow "Cherry." Began to fail in flesh about the 1st of January, 1884, and noticed difficulty in breathing while eating. About the first of February continues to lose flesh, and eats but very little.

EDITORIAL.

DO WE WANT FOREIGN VETERINARIANS?

At the meeting of the Wyoming Stock Growers' Association, held on the 7th of April at Cheyenne, one Mr. Simpson earnestly advocated the engagement of a veterinary surgeon by the Association, who should be exclusively their own property, and nobody else's; and "with due respect to the territorial veterinarianarians," he would suggest the procurement of an imported article, and recommended "getting one from across the water." He said, "If we had had such a veterinarian during the late scare in Kansas, the damaging mistakes made there would not have occurred."

We need not say that this proposition failed to win the acquiescence of the Association, and that prominent amongst the opposers was Mr. T. Sturgis, one of the most influential stock growers in Wyoming, and to whom is due the credit of all the measures adopted for the elevation of veterinary science in that Territory.

State Veterinarian J. D. Hopkins stated his objections in some well-judged remarks, which, however, owing to his peculiar official position, and his natural moderation and kindness, were characterized by less force than they might have been made to carry. But does Wyoming Territory, or do any other parts of the country need the importation of veterinarians from across the water to protect their domestic animals from contagious diseases? Is it so difficult for an educated veterinarian to recognize one or all of them? Who that has seen pleuro-pneumonia, tuberculosis, foot and mouth disease, glanders, farcy etc., knowing their symptoms and their pathology, can fail

to recognize them? Mistakes are possible; an unnecessary "scare" may follow; but in the present case, *if error existed*, the mistake and the scare have produced much resulting good—if it had not been for their occurrence, the important and beneficent laws which have been enacted would not now exist, and the measures of precaution which are springing up all about us, would have had no being. And again, are veterinarians from across the water infallible in the detection of contagious diseases? The history of rinderpest in England proves the contrary.

But, if we cannot look favorably on Mr. Simpson's motion, is there not something else to be done? There is no doubt that year by year contagious diseases are gaining a foot-hold on our continent. Pleuro pneumonia threatens the large herds of the west. Foot and mouth disease has entered, and may again enter our land. Tuberculosis, glanders, farcy are found in every quarter. Dourine, that dreadful disease of the solipeds, may appear in some of our large breeding farms. Who knows whether, perhaps, rinderpest may not find its way to our shores? And to fight all these, to protect our immense national wealth, we have but a handfull of veterinarians, most of them young men, only within the last few years educated for this work.

What we do want—what Wyoming Territory, Nebraska, Dakota, as well as all our large States, where cattle and horses are raised, all need –is to appreciate the value of veterinary education. They must send their sons to veterinary colleges, and must insure their becoming educated veterinarians. The time has passed when young men needed to go abroad to get medical or veterinary education. Let them study at home. There are veterinary colleges in the United States, which they can attend, and acquire all the necessary education, theoretical, as well as practical,and where, as Americans, they can build themselves into noble positions, which they can fill quite as well, if not better than foreign practitioners.

OUTBREAK IN KANSAS.

It is probably, only by degrees, that the profession will be able to come to a conclusion respecting the true nature of the outbreak in Kansas. Having published the report and the opin

ion promulgated by State Veterinarian Holcombe, we lay before our readers, in our present issue, the report of Dr. Faville, together with an extract from that of State Veterinarian Hopkins. These three reports express very different opinions On one hand, a severe contagious disease is recognized, which might, after all, have found its way, (and perhaps it has), down to Kansas, seeing it has been permitted to land in Maine. Again, we have a theory of ergotism, to be followed by a third, which determines it to have been foot-rot. If these opinions are authoritative, which one is the right?

Is it not time we heard something from the head-quarters? Cannot the Veterinarian of the Agricultural Department favor the profession with his report? He certainly has had ample time to put it in form, and if experiments have been necessary to a decision, to have given us their results long before this.

The veterinary profession are waiting for the report of Dr. Salmon.

PHYSIOLOGICAL PATHOLOGY.

NEW EXPERIMENTS ON RABIES.

By Messrs. Pasteur, Chamberland and Roux.

(Read before the Academiè des Sciences of Paris.)

The new facts which I solicit the honor in my own and the names of my collaborators to communicate, have all been developed by the use of two highly effective methods. These are the inoculation of the rabid virus on the surface of the brain, by trephining; the other by the injection of that virus into the circulatory system.

The word threphining suggests the idea of a long operation, with a difficult manipulation. But this suggestion is a faulty one. Amongst the hundreds of operations practised upon dogs, rabbits, guinea pigs, hens, monkeys and sheep, the failures count very few. And as to the dexterity in execution which it requires, it is certainly very easy of acquirement by almost any person. A young assistant of my own laboratory very rapidly learned

from Mr. Roux to perform the operation, and now performs it whenever we require it, almost without accident. It occupies so little time that the last monkey operated upon was chloroformed, trephined, and had recovered from the effects of the anesthetic in twenty minutes, and in less thau fifteen minutes more he was eating a fig.

To be brief, I will give you a concise summary of our attained results:

1. In a previous communication I announced that the most frequent result of the inoculation of the rabid virus into the circulating system is paralytic rabies, with absence of rage and rabid barking. It was therefore to be supposed, that under these conditions, the rabid virus ought first to fix itself and grow upon the marrow. In destroying dogs at the moment of the appearance of the first symptoms of paralysis, and also afterwards studying, comparatively, the virulent power of the marrow, principally at the lumbar bulbe and the virulency of the bulb, we have found that the marrow could be rabid where the bulb was not.

2. We have previously shown, that in cases of rabies, the virus had its seat both in the encephalon and in the marrow. We have more recently, looked for it in the nerves proper and in the salivary glands. We have succeeded in giving rabies with portions of the pneumogastric nerve, whether taken at its origin, at its exit from the cranium, or at points more distant. The sciatic nerves have also shown us the virus, as well as the maxillary, parotid and sublingual glands. The entire nervous system, from its center to its periphery, is then susceptible to the cultivation of the rabid virus. We may now understand the nervous superexcitation manifested in many cases of rabies and so often evident in man through the peculiar symptom of aerophobia.

The virulency of the sailva and of the salivary glands has been observed in dogs rendered rabid by intra-cranial or intravenous inoculation, as upon dogs affected with so-called spontaneous rabies.

3. We have before observed that the rabid virus can be preserved, with all its virulency, in the encephalon and in the mar-

row, during several weeks, when the putrefaction of a cadaver has been prevented by a temperature of 0°x12° below zero.

We have found that the pure virus, placed in closely sealed tubes, was also preserved, during three weeks, and even a month during the heat of summer.

4. We have again verified the fact that rabid virus may exist in the cephalo-rachidean fluid, but that its presence was not constant and even that this liquid could produce rabies when it had a limpid appearance, but again, would not give it where it had become opalescent.

5. We have made many attempts to cultivate the rabid virus, both in the cephalo-rachidean fluid, and in other substances, and even in marrow extracted in a perfect state of purity from animals killed while in perfect health, but thus far without success. "Can it be that there is no rabid microbe," was one day queried by our confrere, M. Bouley. "I can only assure you," I answered, "that if you present to me a rabid and a healthy brain, I shall be able to tell you by microscopic examination of the substance of the two bulbs, which is diseased and which is not." An immense number of molecular granulations are present in both, but those in the rabid bulb are finer and more numerous, and suggest the belief of a microbe of an extremely small size, having neither the form of the bacillus nor that of contracted micrococcus; they are simply mere points.

By one method only have we been able, so far, to isolate these granulations from all the other elements of the nervous substance. This consists in injecting into the veins of the rabid animal, at the moment when asphyxia begins, the virus taken from the bulb of another animal which has died from rabies. In a very few hours, either because the normal elements of the nervous substances fix themselves upon the capillaries, or, rather, that the blood digests them, there remains in this latter fluid only the infinitely small granulations previously mentioned. Besides, in these quite peculiar circumstances, they can easily be colored by various degrees of aniline. *

* We have not yet the evident proofs that these granulations are absolutely the rabid microbes. We are still investigating this point.

In relation to the blood of rabid animals, we succeeded in one instance in giving rabies to a dog with the blood of a rabbit which had died mad. We shall return to the consideration of this fact, which is one to which great importance attaches. One question has occupied us. The fact is generally known that, usually, the bitten dog, if he becomes mad, exhibits rage, with a desire to bite, and has that special barking known as the *rabid bark*. In the ordinary condition of our experiments, when we inoculate the rabid virus into a vein, or into the subcutaneous cellular tissue, it is the paralytic form, without rage or barking, which commonly follows. Trephining on the contrary, gives rise to furious rabies. We have observed, also, that it was possible to obtain furious rabies by the intra-venous, or hypodermic inoculation, the only condition necessary being that we shall use very small portions of virus. The smaller the amount that is used in hypodermic or intra-venous inoculation, the more readily the furious variety of rabies is produced. We have also observed that the use of small quantities in the inoculation may greatly extend the incubations, and that in carrying the dilution beyond a certain limit, not very high, the inoculation remains without effect. The interest attaching to these conclusions justifies me in reporting the details of two experiments.

On the 6th of May, 1883, three dogs were inoculated in the vein of the right hind leg, with rabid virus in a sterilized bouillon. The first dog had $\frac{1}{2}$ cubic centimeter; the second, 1-100; the third, 1-200.

On the tenth day the first dog had lost his ordinary appetite; on the eighteenth, was entirely paralyzed, and died two days later, without bark or rage. The second dog continued to eat on the thirty-seventh day after inoculation; the day following he presented suspicious appearances; on the next, or thirty ninth day, he had the rabid voice, and died on the following day. The third dog did not become mad.

In another experiment, inoculation was performed on a first dog, of one cubic centimeter of rabid matter, in sterilized bouillon; a second received 1-20; and a third, 1-50 of the same matter.

The duration of incubation has been, respectively, seven, twenty and twenty-five days. The first two dogs had the paralytic, and the third the furious barking and biting form of rabies.

We have verified the fact that, although small quantities may have failed to produce rabies, the animal may secure it by new inoculations. In other words, inoculations of small quantities do not insure immunity.

(*To be continued.*)

EXTRACTS FROM FOREIGN JOURNALS.

ELIMINATION OF THE LEFT KIDNEY, FOLLOWING AN INCISION IN THE RUMEN OF A COW.

By M. Michaud.

The subject of this case was an animal which had been operated upon by an empiric, by an incision of the rumen, for the relief of an excessive meteorization. Six days afterward she was in a very bad condition and had lost flesh considerably. The parts where she had been operated upon were covered with a thick plaster of pitch. The incision, which had been made at the left flank and through the rumen, in order to allow the removal of food from the cavity of that organ, was closed by the plaster. This being washed off the infiltrated edges appeared covered with food expelled from the rumen and mixed with sloughing cellular tissue. The part had become the seat of a very offensive odor. The division of the tissues had been made quite near to the last rib and parallel with it, and extended to the transverse processes of the lumbar vetebræ. The prognosis was a very serious one. The wound was carefully cleaned and dressed several times a day, with phenic solution, and covered with a compress of the same kind. A few days later the parts had begun to look better; sloughing cellular tissue was easily removed, but the bottom of the wound appeared a greasy, diseased mass of similar tissue, to remove which required the introduction of the hand into the abdominal cavity. Upon the removal and examination of this mass it proved

to be principally composed of the left kidney, softened and atrophied, the structure of which had undergone partial purulent degeneration. The owner having refused to have the cow destroyed, she was treated to dressings of permaganate of potash solution (1 to 10), and after a slow and tedious course of treatment made a complete recovery.—*Journal de Zootechnie.*

CONTINUED PRESENCE OF THE URACHUS, ACCOMPANIED WITH ANAL IMPERFORATION AND VESICO-RECTAL COMMUNICATION.

By M. M. Kaufmann and Blanc.

A calf, 13 days old, presented a large ventral hernia posterior to the umbilicus, and on the left of the linea alba. On the right of the tumor, the orifice of the sheath resembled a vulva, from which the urine and the fœces escaped. The anus was imperforate and the penis normally developed. At the post-mortem it was found that besides the ventral hernia, which was formed by the posterior part of the abomasum and some intestinal folds, the floating colon terminated by a cœcum turned towards the imperforate anal region. The urachus was existing and opened on the sheath alongside the extremity of the penis, which had a urethral canal closed in its whole length. These abnormal features all resulted from the imperforation of the anus. The fœces accumulating at the extremity of the floating colon, first distended it and then transformed it into a cœcum. The distension continuing, an artificial anus was formed by an opening taking place into the bladder, but as the urethra was closed, the only escape for the urine and fœces was through the urachus, which had remained open.—*Journal de Zootechnie.*

A CASE OF TRIORCHYDIA.

By M. Letard.

The author was called to castrate a yearling Percheron. The process employed was that of the clams; the operation being by covered testicle. The two testicles removed were small, soft and hanging at the end of a comparatively large cord. The animal

made a good recovery. A year later Mr. L. was called to the same place to give his attention to an animal suffering with vertigo, and was then informed that the colt he had castrated a year before was as ardent and troublesome with mares as if he had not been altered. On careful examination of the animal, now a well-developed two-and-a-half-year-old colt, the inguinal region presented on the right side a movable tumor, well up in the inguinal canal, of the size of a billiard ball, and hanging at the extremity of the testicular cord. The animal was then operated upon a second time, the operation being rendered difficult on account of the adhesions of the organ with the surrounding tissues. The testicle was of normal size and had the shape of a pear, the cord being quite small with an atrophied character, presenting towards its middle a cylindrical mass of fibrous consistency, of the size of a quill. It was the remaining portion of the cord from which a testicle was removed at the first operation. —*Archives Veterinaires.*

REDUCTION OF FOUR INGUINAL HERNIA ON THE SAME ANIMAL.

By M. Bonnigal.

A stallion, four years old, was subject to frequent colics, probably due to inguinal hernia, which were reduced spontaneously during the struggles of the animal. One day, the colic continuing, the author was called in and found a case of strangulated hernia. Being unable to reduce it, the operation was performed, thirteen hours after the first symptoms of colic. Though some difficulties were encountered during the operation, it proved successful, and the animal returned to his work six weeks after.

Two weeks later another attack of colic occurred. This proved to be a hernia of the left inguinal region, which after numerous attempts was at last reduced. Fearing to castrate, on account of the excessive warmth of the weather, the animal was left alone, to be again attacked with the former trouble after eight days. Being once more relieved, he remained hearty for three weeks more, when he was again ruptured. He was then castrated. The recovery was complete.—*Presse Veterinaire.*

REVIEW.

THE RELATIONS OF ANIMAL DISEASES TO THE PUBLIC HEALTH, AND THEIR PREVENTION,

By Frank S. Billings, D.V.S., Graduate of the Royal Veterinary Institute of Berlin; Member of the Royal Veterinary Association of the Province of Brandenburg, Honorary Member of the Veterinary Society of Montreal, Canada, &c.

Since his return to the United States from his European visit, where the author of this volume had been perfecting his professional studies at the Veterinary Institute of Berlin, of which he is the first American graduate, Mr. Billings has directed the principal efforts of his professional career to the aim of placing himself before the public as the champion of the necessity of the establishment of a National Veterinary School in this country. Having at various times appealed by his writings in a series of published articles referring to that subject, he has to-day crowned his former efforts by the publication of the "Relations of Animal Diseases, etc.," as explicatory of the powerful reasons which render the foundation of such a national institution imperative and desirable. The work appears in a handsome volume of over 400 pages, brought out in a handsome and attractive style, and written in his own peculiar, enthusiastic and earnest tone and manner. The work possesses many excellent points, but would have lost none of its value if the language of the author had been, in many cases, less severe, and in many parts uncompromising. *La critique est aisée*, and the ability to criticise well or severely, is not the only quality required to insure a desirable result, however good and commendable that may be.

The "Relations of Animal Diseases" is divided into three parts.

The first treats of some of the diseases of domestic animals. Trichiniasis is a subject to which Mr. Billings has given a large amount of attention. The long article published some time since in these pages on that subject, will suffice to satisfy the reader in quest of discoveries of interest, of the value of the work, and especially at a period when, as at the present time, the question

of the existence of this disease in American swine is exciting so large a degree of interest in Europe. Hog cholera, tuberculosis, accompanied with an excellent article on infection and bacteria, anthrax, Texas fever, rabies and glanders, complete the first part. It occurs to us that in treating of the various diseases, it is to be regretted that Mr. Billings has not entered a little more fully into the minutiæ of the new discoveries recently achieved by European veterinarians in some of these affections. But the work was, of course, not designed to be a book on practice, nor on sanitary medicine, and probably what is said touching these matters will be considered sufficient to give weight to the main object in view. This is gradually brought forward in Part Second, and well developed in the concluding division.

Yet why do we find no mention of certain other affections, such as pleuro-pneumonia contagiosa, eczema contagiosa, and others? Might they not have proved as important and interesting in the view of those to whom the book is, probably, principally directed, viz.: members of Congress, of the various departments, or of the General and various State Governments?

In Part Second the reader is treated to a history of veterinary medicine, not in this country, but in Europe. We earnestly recommend this portion of the work to the reader's attention. It is the result of careful compilation and research, and is probably one of the best we have ever seen. Taking up the subject from the most remote periods of antiquity, the author brings us down by degrees to the day of the foundation of veterinary schools in Europe, dwelling principally on the schools of Germany and the Veterinary Institute of Prussia, which seems to be exhibited to us as the typical institution of the world. Nothing less could be expected than this expression of the love and admiration of an alumnus for his alma mater.

This part is concluded by the publication of the Prussian Laws for the Suppression of Contagious Animal Diseases, and if we did not know our friend Billings to be a thorough American at heart, as he truly is, we should certainly credit him with a German nativity.

In Part Three the author reaches the main object of his ex-

cellent work. Having first shown the danger to the human race of animal diseases, and secondly, placed before his readers the methods by which these dangers are avoided in Germany, he now calls upon us for the means of checking them in the United States, which may be comprehensively stated to be the establishment of a national veterinary police system and a National Veterinary Institute.

Every lover of his profession will agree with the idea, and every veterinarian will certainly endorse the principle laid down in the views so strongly, and, at times, too strongly, expressed. But to arrive at this conclusion, was it necessary to speak, as the author has done, of the attempts which have been made to establish veterinary schools by private enterprise? These efforts have, in some cases, at least, originated in disinterested motives; as much so, at least, as those which usually lie at the foundation of business endeavors, and have not been started with the sole consideration "*whether it would pay or not, in the American sense*," but with the honorable object of educating, as well as possible, young men desiring it, in the various departments of veterinary medicine. It ought not to be expected that these schools, in which the gentlemen engaged in teaching are contributing their time and labor without either private, city, State or general governmental financial support, can accomplish results such as the large schools of Europe can bring forth, with the assistance of a heavy financial budget. And still, these private schools, asking nothing, expecting nothing, *non-paying* institutions, keep on with their work, which they believe has not proved altogether worthless.

Taken altogether, the "Relations of Animal Diseases" will prove an excellent acquisition for every one who is a lover of live-stock and of his own welfare, and is mindful of his personal value from the point of view of our national wealth. It must find its way into every veterinary library, and in producing it Mr. Billings has done well, and merits the sincere good wishes of all for its success, and that of his efforts in aiding in the creation in America of a National Veterinary School. (L.)

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY SOCIETY.

The regulary monthly meeting of the New York State Veterinary Society was held at the American Veterinary College, on Tuesday, April 8th, at 8 P. M.

The President, Dr. Liautard, in the chair.

Members present were, Drs. Burden, Field, Robertson, Coates, L. McLean, Kemp, R. McLean, Dixon, Johnson, Bath, Pendry, Bretherton, Walton, Denslow, and Charum.

Minutes of last meeting read and adopted.

The Chair stated the Society would, for the present, continue to enjoy the hospitality of the College, and hold its meetings in the Lecture-Room of that institution, and obviate the expense of meeting elsewhere.

Dr. J. S. Kemp, being called upon to read his promised paper, stated that he had concluded to read upon a subject they no doubt were well acquainted with. *He* called it "Mud Fever," but had been able to find but little or no information on the subject in the text books, so, consequently, would have to give his own experience. His paper, therefore, would naturally be short, yet he trusted it would serve the requisite purpose, of drawing out the ideas and opinions of those present.

He read as follows:

FROST BITES—"MUD FEVER."

Under this heading, which I have adopted for the want of a more suitable one, I shall attempt to describe a peculiar affection of the phalangeal region of the horse, which I have had the opportunity to observe during the winter just past. Possibly "Sloughing and Healing" would be a more appropriate heading under which to write on this subject, for this is precisely what occurs in the course of an attack of so-called "mud fever," which has prevailed epizootically during the past winter.

"Mud fever" might be defined as an inflammation affecting one or more circumscribed portions of the phalangeal region; an inflammation which, although it has no tendency to spread later-

ally, invades the subcutaneous areola and aponeurotic structures, and is followed by a sloughing of the portion of skin involved and the connective tissue beneath.

In many cases the process resembles the suppurative termination of a contused wound, plastic infiltration existing at first, followed by suppuration, which soon attacks the skin, which it perforates from within outward, exposing an irregular cavity in which the subcutaneous connective tissue is represented by masses of shreddy sloughs, soaked in a puriform fluid, mixed with coagulated lymph and blood.

In regard to the causes which operate to produce these changes, there is but one which I can assign as the direct cause—and that is cold. I do not attribute it to low atmospheric temperature, nor to snow or ice—which do not produce a degree of cold greater than 32° Fahrenheit—but to artificial cold, caused by the admixture of salt with the snow in the streets. When salt is mixed with snow in equal parts, an extreme degree of cold is attained, the temperature being reduced from zero, Fahrenheit, to 18° below. The effect of such intense cold upon the integuments of a region so meagerly supplied with blood vessels, and so far away from the centre of circulation as the phalangeal region of the horse, can readily be imagined: congelation must follow, and gangrene is the result, the animal, in the great majority of cases, being taken from the streets into a hot stable where his feet and legs are surrounded with straw. Moreover, the effects of dry cold are much less injurious to the part where it is applied than cold associated with moisture, and it is to wet and cold at the same time that these horses' feet are exposed. Although the various forms of eczematoses, familiarly known as "scratches," "grease," and "chapping," are met with during the entire winter, the deep sloughings to which I have alluded occur only while the streets contain snow and ice, which fact leads me to the conclusion that excessive cold is the sole cause of their development.

Pathology.—The effect of extreme cold on the animal body is to lower all vital activity. Whether this extinction of vitality is general or local depends upon whether the entire body or a portion only is exposed to its effects. The blood vessels of the

exposed part, after first dilating, contract to such an extent as not to admit of the passage of the blood corpuscules—the physiological processes necessary to life cannot go on, and the part is destroyed.

Symptoms.—As a rule horses that are used for business purposes, and spend most of the time in the streets are the sufferers. The first symptom noticed is that of lameness—generally of one of the posterior extremeties. At the same time the leg is noticed to be somewhat swollen as far as the hock. The lameness increases, and by the third day after its first appearance the animal is unwilling to put the foot to the ground. If examined at this time the seat of the injury (generally located in the space between the ergot and the glomes of the frog) is found to be swollen and œdematous, pitting on pressure, and excessively painful—the slightest touch causing the animal to throw the leg violently outward at right angles with the body. About the fifth day the skin is perforated from within outward, and a quantity of sero-purulent fluid escapes. In a short time a portion of the skin surrounding the perforation detaches itself and leaves exposed an irregular cavity sometimes an inch in depth. This cavity slowly fills up by granulations. The treatment is simple, being directed toward the promotion of the suppurative process, and the detachment of the gangrenous tissue. After this has been effected the cavity which remains is to be treated like an ordinary granulating wound.

In answer, Dr. Kemp held with poulticing, and considered it was due to cold, and consequent loss of vitality. Dr. R. McLean questioned, if it was due to cold, and alternation of heat. He had seen several very bad cases lately, yet there had been no cold weather or salt. He questioned, if the causes were such as laid down by the essayist. In large stables, only a few horses were found to be affected with mud fever. He spoke of one case that had come under his notice, of a horse having stood for some time in caustic soda and potash, which resulted in the horse having this so-called trouble.

Dr. W. J. Coates contended, that "frost bite" and "mud fever" were here misapplied; a frost bite was a cause. Erythema, or mud fever, was a better term. Mud generally on the skin,

received more or less friction, which would set up a fever. Treatment ought to be according to the cause; if sloughing, poultice—poultice would be good, as it hastened it.

Dr. Kemp thought that erythema was a wrong term to apply, when the trouble was due to chafing.

Dr. Coates said, if vitality is destroyed, sloughing must take place. Ice on surface, was a cause of loss of vitality. It might even be due to frost bite, or even a burn.

Dr. C. Burden admitted that it was generally thought to be due to cold, yet there have been more cases of late, although there had been no cold weather.

Dr. S. K. Johnson thought there were other predisposing causes, and spoke of the practice of washing off the mud in some stables, and not in others, and of the different results.

Dr. L. McLean wanted to know where the line was to be drawn between frost bite and mud fever and scratches, and asked if scratches was to be excluded, and mud fever to be considered a frost bite.

Dr. Kemp drew no line between the two.

Dr. R. McLean considered it erythema, having only a deeper effect; what the cause was it was hard to say. He referred to a stable of thirty-six horses, which, last year, had had the hair on the fetlocks cut close, and washed regularly, yet had been considerably troubled with mud fever and scratches; this year this had not been done, and there had been less trouble.

Dr. Kemp contended that mud was of no benefit, and ought not to be allowed to remain on all night.

Dr. R. McLean said the mud was rubbed in.

Dr. Kemp did not consider that rubbing the mud in was washing it off.

Dr. Pendry contended, that where this trouble appeared to follow washing, it was not due to that act, but entirely due to the careless and improper way the washing was done, and more particularly in not properly drying the parts after. He failed to see any virtue in mud, gathered by the horses from the dirty streets, and thought that the sooner the fetlocks were relieved from such mud the better.

Dr. R. McLean had seen as much scratches and mud fever as ever lately, although there had been no cold or frost. It was a question if it was not due to some atmospheric influences. He did not consider it was contagious.

Dr. J. D. Dixon favored the idea of its being epizootic; that it was possible to be so and yet not contagious; considered the cause was cold; when frostbitten, the bad effects may not be developed for some considerable time after. To prove the possibility of this theory, he spoke of having one of his ears frost bitten, and not feeling the bad effects until six months after. One case he had treated, he traced the cause to ashes from a gas house; another had come under his notice, where the owner of a horse which was badly affected with the trouble under discussion, used the animal for carting manure. The animal's feet were nearly all the time in it. The result was that the horse made a good recovery without any treatment.

Dr. R. McLean could not see how it was possible that the disease could lay dormant for so long a time.

Dr. Kemp referred to a case, where each leg was affected with mud fever, one after the other—as soon as the one was all right the other became affected.

Dr. L. McLean questioned whether some of these cases were not confounded with equine variola.

Dr. W. C. Bretherton asked how were cases to be accounted for that were met with in the summer. He had been called upon to treat cases during that time.

Dr. Jas. L. Robertson thought Williams spoke of "Mud Fever" in his surgery. There were different results due to different causes. The causes might yet be found to be parasitic; he was inclined to that belief, and, too, considered it might be contagious.

Dr. E. Charum considered the disease was due more from irritation than cold; he held that mud fever and frost bites were two different troubles due from different causes, considered that the cold easterly winds had much to do with the outbreak. The treatment he used was dressing the parts with vaseline, oxide

of zinc and camphor, one part to eight, giving plethoric horses a cathartic.

Dr. R. McLean disagreed with this idea as to cause; thought treatment good except the reason given for giving the cathartic.

Dr. L. McLean thought there might be something in the theory of cold winds, but too much should not be laid to that cause. He could not see how a cathartic would reduce a fever.

Dr. Pendry said he found that where he gave a cathartic the cases seem to do better. He used as a wash the ordinary white lotion, adding tannic acid, one to sixteen, which appeared to work well.

Dr. Liautard thought that possibly the cause would some time be found to be due to a parasite. He certainly favored the idea, although he had not been able to give that part of the subject sufficient thought and attention to be able to express a direct opinion. He thought no general treatment could be laid down, but objected to greasy substances, as, when used in his practice, the cases seem to get worse. He had used iodoform with good results.

After a vote of thanks to the essayist the meeting went into Committee of the Whole, who, on rising reported the election of F. S. Allen, D.V.S.; J. E. Ryder, D.V.S.; Phillip Newman, D.V.S.; and E. A. Parsons, D.V.S., to membership.

The Committee on Bill reported that they considered it too late to approach the House of Assembly with any bill this session, and recommended the matter to be made a special order of business, at the regular September meeting. The report was received and the subject ordered to be made a special order for September meeting.

Dr. W. H. Arrowsmith, Jersey City, was proposed for membership.

J. H. Raymond, M.D., Commissioner Board of Health, Brooklyn, was proposen as an honorary member, as a mark of appreciation of his official recognition of the veterinary profession.

Dr. S. S. Field was appointed essayist for the next meeting.

W. H. PENDRY, *Sec.*

THE CONNECTICUT VETERINARY MEDICAL SOCIETY.

The first regular meeting of this Society was held in Waterbury, Tuesday afternoon, April 1st., the President, Dr. W. T. Sullivan, New Haven, in the chair.

There were present Messrs. E. A. McClellan, Bridgeport; W. K. Lewis, Meriden; Nathan Tibbals, New Haven; Geo. H. Parkinson, Middletown, and Thomas Bland, Waterbury.

Telegrams of excuse were received from Messrs. A. Murray, Stamford, and H. J. McHugh, New Haven. A letter was read from Prof. Liautard, congratulating the Society on its formation and wishing it success.

The President then delivered a very lengthy and able address, his subject being operative surgery.

Considerable disappointment was felt at the absence of Dr. McHugh, as he was to have read a paper on cerebro-spinal-meningitis.

Many interesting cases were spoken off and freely discussed. Dr. E. A. McClellan spoke of the favorable results obtained in cases of impaction, by the intravenous injection of physostigminum, and stated that he had met with negative results by the subcutaneous method. Dr. Parkinson said he had used the alkaloid subcutaneously with negative results, and that he attributed it to the impurity of the drug.

Dr. Tibbals did not believe in the use of the trocar in cases of tympanitis. Messrs. McClellan and Bland were quite enthusiastic as to its use, and stated that it not only relieved the suffering animal at once, but made the administration of medicine much easier and accompanied with less danger. One of the members said he always found the easiest way to administer linseed oil to horses was through the nostrils. and had never seen any injurious effects from so doing. Thos. Bland considered it was far from being scientific and was undoubtedly a dangerous practice, having seen bad results accrue therefrom, not at his hands, but at the hands of ignorant empirics, and would advise practitioners never to resort to such means, as they not only laid themselves open to censure and criticisms by the profession but by the public generally. These views were well supported.

Dr. Lewis spoke of a very easy and simple remedy for quittors and promised to enlighten the Society on that subject at the next meeting.

The following gentlemen were unanimously elected to membership: Drs. F. F. Rice, Hartford; E. C. Ross, New Haven; F. W. McClellan, Bridgeport, and A. D. Sturges, Wilton.

As only the Chairman of the Board of Censors was elected at the preliminary meeting, on account of an insufficient number of members, it was very gratifying to receive four new and able gentlemen into the Society.

The Board of Censors was at once made complete by the unanimous election of the following gentlemeu: Messrs. Geo. H. Parkinson, F. W. McClellan, F. E. Rice and A. D. Sturges.

It was unanimously agreed that all meetiugs hereafter shall be held in New Haven, it being easier of access, and, in train accommodations better than other Connecticut cities.

The meeting terminated with a vote of thanks to the President for his interesting address.

The members afterwards did justice to a fine collation at the Park Hotel.

THOMAS BLAND, Secretary.

MASSACHUSETTS VETERINARY ASSOCIATION.

In conformity to the preliminary meeting, the committee called a meeting at the United States Hotel April 2, 1884, with F. H. Osgood, Chairman, and M. Bunker, Secretary, when they reported favorably in regard to all diplomas presented to them.

It was moved and seconded: "That those of the original members who did not have their diplomas at the meeting of the committee, be now examined." Carried.

It was moved and seconded: "That after to-night, no diplomas will be examined by this committee." Carried.

Committee reported favorable on all but C. H. Hollis, which was not presented.

Committee was then discharged.

Moved and seconded: "That we resolve ourselves into the

Massachusetts Veterinary Association, and ballot for President, Vice-President, Secretary and Treasurer, and an Executive Committee of three."

W. Bryden, V. S., of Boston, President, F. H. Osgood, M. R. C. V. S., of Springfield, Vice-President, J. F. Winchester, D.V.S. Lawrence, Secretary and Treasurer. F. S. Billings, V. M., of Boston, J. S. Saunders, D.V.S., of Boston, and C. P. Lyman, F.R.C.V.S., of Boston, the Executive Committees.

Moved and seconded: "That the Executive Committee draw a set of By-Laws and Constitution, to be presented at the next meeting of the Massachusetts Veterinary Association." Carried.

Moved and seconded: "That any diplomas which may be at this meeting, be presented to the Executive Committee for acceptance, and the gentlemen be admitted as charter members, but no others shall be admitted hereafter as such." Lost.

Moved and seconded: "That the next meeting be held the first Wednesday in May, at the United States Hotel, at 7 P. M., and the Secretary notify each member." Carried.

Moved and seconded: "That there be an assessment of one dollar on each member." Carried.

Dr. Billings was appointed essayist for next meeting.

Moved and seconded: "That the meeting adjourn." Carried.

W. Bryden, V.S., President. J. F. Winchester, D.V.S., Secretary.

CORRESPONDENCE.

CONTAGION OF GLANDERS TO MAN.

Rockville, Conn. March 31, 1884.

A. Liautard, M.D., V.S.:

Dear Sir—I send you herewith an article taken this week from the *Tolland County Leader*, a paper published in Rockville, Conn.

It seems to me that this case had ought to be quoted in all the veterinary journals, as showing the liability of human pa-

tients to contract this disease, and to call the attention of veterinarians and other interested parties to the fact that in many States very imperfect legislation exists on this subject, which is so eminently dangerous to man and beast.

I remain, very truly yours,

W. Frank Fay.

Not a great while ago Orrin S. Todd, who lives about three miles from Tolland St., on the Wilmington road, purchased a horse of a man who came along. At that time or soon after, he noticed that the animal had what he supposed to be a cold, which was finally quite severe. He proceeded to doctor it in various ways, such as blowing smoke into its nostrils, etc. About two weeks ago Mr. Todd was taken sick, the symptoms being similar to a case of pneumonia. Afterwards they assumed those of rheumatism. At one time the joints swelled, and finally there were pimples or blisters noticed. Later there was mattery discharges from the nostrils.

Dr. Johnson of Mansfield had charge of the case, and was satisfied that it was an actual case of glanders, which were communicated from the horse. On Saturday last, Dr. Gilnack consulted with Dr. Johnson, and his decision was the same. Medical aid seemed unavailing, and the patient died on Monday, the funeral taking place yesterday.

It is stated, though unauthoritatively, that the horse was one of the several which was sometime ago pronounced unsound in Rockville, though Mr. Tood did not procure him from this way, and probably knew nothing of the circumstances. The case shows that a glandered horse is not just the animal to have around.

LITTLE OR NOTHING TO ADD.

Editor American Veterinary Review:

In the last number of the Review, Mr. Plageman takes exception to my report of the conference held lately in Brooklyn, respecting pleuro-pneumonia.

He starts off by saying that I have "misrepresented some

statements made in connection with the questions put to me by the Commissioner." Is he trying to impress upon the readers of the REVIEW that he was the most important person at the meeting, and occupied the attention of those present for a long time? When the fact is, he said so little, (whether or not, from lack of knowledge on the subject, it is not for me to say) that it is now, at this date, very little trouble to remember what he did say. He says I state, "he had nothing to add to what had already been said," and adds "I am positive I stated, 'I had very little to add.' Here is certainly a distinction with—of course, in my opinion—a very slight difference. Anyway, it is splitting hairs too fine for me, and I will allow him that point, and say, he had '*very little* to add." Again, he has no recollection of saying any such words, as "there were others present, who had had far more experience with pleuro-pneumonia." It is my turn to say "emphatically," that this is, in substance, reported correctly. He did pay this just tribute to gentlemen who were present; such a remark was no discredit to him. Surely he must have forgotten who some of the gentlemen were, who were there, or he would never have taken exception to that point of my report. My answer here, is: *He did so state, as reported.* Now, with regard to the question by the Chair, as to the "qualifications required for a veterinary surgeon," and he "emphatically" denying that he said "there were none," I can simply say, that he must have no recollection, whatever, of what he really did say there, if he persists in denying that he made any such statement. Here again, there was no reflection upon him, he simply stated what was perfectly true. There are, at present in the State of New York, no legal qualifications required for a veterinary surgeon. I do not think the Chair used the word "legal," but every one present, accepted the question in that light, which I am sure was so intended, and so replied to. If not, why did Dr. Peters (I did not know who the gentleman was at the time I wrote) follow by making the remark he did, viz: "I understand that lately, there has been a law passed in Illinois, which prevents any veterinary surgeon practicing unless he holds a diploma," and, I contend, it would not "have been absurd for him (The Chairman) to ask such a question." I consider it was a

proper question, and I am sure, was put in a proper spirit. I simply again, "emphatically say," *that such a question was asked, and answered by Plageman as reported.*

Now, for the insulting part of his letter. What have "essential requirements" got to do with "a truthful report?" I am not given to making wrong statements maliciously, and of this, *I am* able "to form an opinion" and back it in any shape or form any one interested may desire. He writes, "it will give him an opportunity to correct his statements, and for the future, be a little more just in his remarks, especially to his senior and more qualified veterinary surgeon." I have embraced the opportunity, as you will see, in the latter part of his comment. I think it enough to quote the two following lines:

"Oh wad some power the giftie gie us,
To see oursel's as ithers see us."

I trust I shall be pardoned for saying that *I* do not consider *him* a "more qualified veterinary surgeon" tham I am.

He follows in a strain that leads me to suppose that some one had had occasion to criticise some former communication of his. I looked through the back numbers of the REVIEW, and found some one had been "ridiculing" him, (in numbers for December, 1878, and January, 1879), so that I pass over that part of his letter, as not referring to me, though I should hardly have thought "a superior veterinary surgeon," who states he is a M.R.C.V.S., would lay himself open to such criticism as that given by "Nemo." He says he is proud of his title; I suppose he is. It is one that members of my family have enjoyed as far back as 1826—and one held the position of Vice-President of the Royal College for a term—but I can assure him that I am just as proud of being a D.V.S. He must not forget either that at the present day veterinary surgery is more a science than it was thirty or forty years ago. He claims that he has "had ample opportunities to correct blunders made by veterinary surgeons just out of their pupilage, and others that have been years in practice," but he was "generous enough to overlook them." Well! I'll be generous enough, in the interests of the profession, to make no comment. He claims, as a mark of distinction, that he prac-

ticed with a veterinary surgeon before entering college. I think, he will find that this is the case—as in my own—with nearly all those who now graduate.

In conclusion, I would refer your readers to his letter, the cause of it, and this answer, and ask who has done the "slurring," or where the term "maliciousness" is applicable.

I am sorry to trouble you with so long a communication, but am obliged to do so, in justice to myself, my friends, and the members of the profession who have graduated in this country, for I consider, as others do, he has, through me, aimed an insult at all American graduates of veterinary surgery.

Respectfully yours,

W. H. PENDRY, D.V.S.

Brooklyn, March 20, 1884.

VETERINARIAN WANTED.

MINNEAPOLIS, MINN., April 16, 1884.

DEAR SIR.—Do you know of any young man, a graduate of your college, who would like to come to this city and take charge of about five hundred head of horses, and devote part of his time to working up an outside practice? It strikes me that this would be a good opening for a young man just starting out.

A good man could command all the outside business he could attend to. Yours, truly,

M. ELDER,
Box 371, Minneapolis.

NEWS AND SUNDRIES.

BLIND CALVES.—Three cows in Nantucket, Mass., have this spring given birth to calves without eyes.

PROLIFIC EWES.—A Virginia farmer last year raised ninety lambs from sixty-seven Shropshiredown sheep.

REMOVAL OF EMBARGO.—The State Department is officially advised that Greece has removed the embargo on American pork.

GLANDERS.—An outbreak of glanders on the farm of Mark Miles, near Fossland, Illinois, was met by the shooting of five horses and the burning of the barn and harness.—*Prairie Farmer.*

TRICHINIASIS IN PENNSYLVANIA.—A newspaper report from Pittsburgh states that trichiniasis caused a death in Westmoreland county last week, and that six persons are dangerously sick with the same affection.

SWINE DISEASE.—Hogs in and around Denver have been dying in great numbers from lung disease. The appointment of a swine inspector at Denver is talked of, as it is supposed some of the diseased animals were disposed of there for human food.—*Prairie Farmer.*

TRICHINIASIS.—The Senate Committee on Foreign Relations, if we may judge from a bill it has reported to the Senate, is content to rely on thorough salting as a safeguard against injury from the use of trichinous pork, sufficient time being allowed to elapse to insure the permeation of the meat by the salt.—*N. Y. Med. Journal.*

A DAIRY EXHIBIT AT MUNICH.—The American government has received an invitation to participate in an exhibition of dairy products at Munich, in October, 1884, under the management of the General Committee of the Agricultural Union of Bavaria, in connection with the Bremen Dairymen's Union.—*Scientific American.*

OSTRICH FARMING.—The following report shows the value of ostrich farming going on in Southern California: "The ostriches on the Anaheim farm laid 305 eggs during the season from the 1st of May last until the 1st of October. The birds have been plucked twice since their arrival on the farm. The first clip, in May last, yielded $500. The clip in December yielded 2,500 quills of all kinds, from 18 birds, and is valued at $1,000."—*Home, Farm and Factory.*

MEAT INSPECTION.—The inspection of meat in New York is in a fair way to be made much more thorough than it has been

heretofore, bills having been introduced into both houses of the Legislature providing for the appointment of five inspectors of meat by the Board of Health, and making it a punishable offense to offer for sale any meat that has not been inspected by them, the inspection to be repeated every second day until the meat is sold.—*N. Y. Med. Journal.*

A Good Riddance.—The foot and mouth disease at Falmouth and Deering has entirely disappeared. The cattle have all recovered and now are considered well, though in somewhat of a depreciated condition in consequence of their sickness. The commissioners commenced last week the work of disinfecting the stables and premises, and it will be continued in the order of the dates of the recovery of the animals, after which the quarantine will be relieved, if no further cases appear. The hay in the barns will be held for the use of the cattle till the pasturing season, when the disposition of that which remains will be considered by the commissioners.—*Prairie Farmer.*

What is Contagion? What is Infection?—Dr.——of W.——appeared before the special committee last night, to further explain the so-called foot and mouth disease. Being asked by Dr. Cartter to explain what contagion was, he replied:

"Contagion is nothing but worms and bugs, for instance, the same as seen in trichinæ in hogs. One would take it and then another, by rubbing against each other, giving the worms and bugs a chance to crawl and jump over."

"What is infection?"

"The same as contagion, only not quite so wormy and buggy. It is not so easily caught by the neighbors of the animal that has 'em."—*Ext. Kansas paper.*

Turpentine in Infectious Diseases.—The *Med. Record* tells us that H. Vilandt writes in the *Ugeskrift for Laeger*, concerning the value of the oil of turpentine in the treatment and prophylaxis of diphtheria and the exanthematous diseases. He states that he has never seen any of these diseases spread from a sick child to other members of the family when this remedy was applied. In many of his cases no isolation could be attempted, as the mother

was the only female in the family, and was obliged to take care of both the sick and the well, continually passing back and forth from one to the other. His method was to pour from twenty to forty drops of a mixture of equal parts of turpentine and carbolic acid into a kettle of water, which was kept simmering over a slow fire, so that the air of the sick room was constantly impregnated with the odor of these two substances. He claims also that by this means a favorable influence is exerted upon the exudation in diphtheria, although it is by no means curative of the disease, and should never be relied upon to the exclusion of other remedies.

EXCHANGES, ETC., RECEIVED.

FOREIGN.—Gazette Medicale, Revue Scientifique, Revue des Sciences Medicale, Revue d'Hygiene, Revue fur Thierheilkunde und Thierzucht, Repertorium der Thierheilkunde, Annales de Belgique, Archives Veterinaire, Presse Veterinaire, Recueil de Medicine Veterinaire, Clinica Veterinaria, Veterinary Journal, Veterinarian.

HOME.—Druggists' Circular, Scientific American, Live Stock Journal, American Agriculturist, Country Gentleman, Breeders' Gazette, Spirit of the Times, Turf, Field and Farm, Medical Record, New York Medical Journal, Journal of Comparative Medicine and Surgery.

JOURNALS.—Maine Farmer, Farmer's Review, Chicago Times, Journal of Agriculture, Prairie Farmer, Ohio Farmer, Practical Farmer.

BOOKS AND PAMPHLETS.—R. Senola di Superiori di Medicine Veterinaria-di Milano, Heridity and Contagion on the Propagation of Tuberculosis, by Herr A. Lydtin, G. Fleming and M. Van Hertsen; Ueber Wesen und Behandlung des Sojen Hufkrebsis, by Dr. Putz; Texas Cattle Fever—Is it a Chimera or Reality, by D. E. Salmon D.V. M.; Microbes et Inoculation Virulentes, by M. Leblanc; Rapport Generale sus les Malades Contagiuses en 1883, by M. Leblanc; Bulletin Trimestrial International des Epsizooties, by C. Leblanc and P. Cagny; Etat Sanitaire des Animaux Domestiques en 1882, by Prof. W. E. Kenkel.

COMMUNICATIONS.—W. H. Pendry, J. Hopkins, J. F. Winchester, R. Huidekoper, Thomas Bland, J. Kemp, W. F. Fay.